INFORMAL EXAMINERS AMENDMENT

PATENT

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NOVEL MOLECULES OF THE CARD-RELATED PROTEIN FAMILY AND USES THEREOF

Cross Reference to Related Applications

This application is a continuation-in-part of U.S. Application Serial No. 09/340,620, filed June 28, 1999, now US 6,482,933 which is a continuation-in-part of U.S. Application Serial No. 09/245,281, filed February 5, 1999, now US 6,369,196 which is a continuation-in-part of U.S. Application Serial No. 09/207,359, filed December 8, 1998, now US 6,469,140 which is a continuation-in-part of U.S. Application Serial No. 09/099,041, filed June 17, 1998, now US 6,340,576 which is a continuation-in-part of U.S. Application Serial No. 09/019,942, filed February 6, 1998, now US 6,633,855. The contents of each of these applications is incorporated herein by reference.

Background of the Invention

In multicellular organisms, homeostasis is maintained by balancing the rate of cell proliferation against the rate of cell death. Cell proliferation is influenced by numerous growth factors and the expression of proto-oncogenes, which typically encourage progression through the cell cycle. In contrast, numerous events, including the expression of tumor suppressor genes, can lead to an arrest of cellular proliferation.

In differentiated cells, a particular type of cell death called apoptosis occurs when an internal suicide program is activated. This program can be initiated by a variety of external signals as well as signals that are generated within the cell in response to, for example, genetic damage. For many years, the magnitude of apoptotic cell death was not appreciated because the dying cells are quickly eliminated by phagocytes, without an inflammatory response.

The mechanisms that mediate apoptosis have been intensively studied. These mechanisms involve the activation of endogenous proteases, loss of mitochondrial function, and structural changes such as disruption of the cytoskeleton, cell shrinkage, membrane blebbing, and nuclear condensation due to degradation of DNA. The various signals that trigger apoptosis are thought to bring about these events by converging on a common cell death pathway that is regulated by the expression of genes that are highly conserved from worms, such as *C. elegans*, to humans. In fact, invertebrate model